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DISEASES OF THE NERVOUS SYSTEM

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DISEASES of the NERVOUS SYSTEM

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

Insulin Sub-Coma Method in Treating Mentally-Ill Patients at Home

NEWMAN COHEN, M.D.
Boston, Massachusetts

The belief that treatment of mental illness requires a hospital setting is no longer uniformly accepted. There is a large group of patients who do not require hospitalization, and whose mental condition lends itself to insulin sub-shock treatment carried out in the patient's home.

Personal results with the ambulatory insulin sub-coma method of treatment have been reported in two previous articles.[1,2] This form of therapy has subsequently been continued, and an additional report of the clinical results obtained in a heterogeneous group of patients is now under preparation. The purpose of this article is to set forth the advantages and disadvantages of insulin sub-coma treatment of mental disorders in the patient's home. The advantages fall into two distinct groups, the first in terms of the therapeutic agent, per se, sub-shock doses of insulin (the modified form of insulin shock treatment) and the second, from the standpoint of the advantages inherent in the home setting.

Advantages of the Insulin Sub-Coma Method of Treatment

Insulin sub-coma treatment has proved valuable and effective in a large variety of mental disorders which, in many cases, have been refractory to other methods of management.

None of the more drastic methods (electric shock treatment, insulin shock treatment and lobotomy) can be readily applied at home. Insulin shock treatment involves a higher cost in the time of physicians, nurses, and in supplies.

With insulin shock treatment there is an appreciable incidence of untoward results and complications, even when the treatment is administered by trained physicians with excellent laboratory facilities. Insulin sub-shock is a relatively safe method of treatment when administered by a well-trained physician. It is a less drastic procedure than actual shock treatment and in all probability produces no irreversible brain damage. Patients given as many as a hundred or more sub-coma treatments showed no evidence of mental deterioration.

The treatment is not incapacitating, and the patient is usually able to be up and about promptly. This has two important advantages over other methods: the patient is more amenable to psychotherapy, and he is alert and able to join in activities immediately, and is not in the toxic, beclouded state characteristic of electric shock treatment, insulin coma treatment, or heavy barbiturate medication. Complications occur less frequently than with the more drastic forms of therapy. Also, the after-care is simple and imposes no undue hardship on either the patient or his family.

Insulin sub-shock treatment improves the patient's physical condition. The patient eats and sleeps better, gains in weight, and has an increased feeling of physical well-being. Sub-coma doses of insulin also have an al-

most specific effect in relieving anxiety and tension and is a valuable method of sedation.

Advantages of Home Treatment of the Mentally-Ill Patient

Since most people look upon mental institutions with dread and revulsion, a visit to the hospital is fraught with disapprobation. Thus, from the patient's standpoint home treatment is obviously less objectionable than treatment in a mental institution, for it spares the patient the psychologic trauma of confinement and the atmosphere of a hospital with its locked doors and barred windows, as well as the social repercussions of admission to a mental hospital, and the stigma that is still attached to hospitalization in the popular mind.

Treatment at home lessens the patient's feeling that he is strange and abnormal and helps to maintain his prestige. In the mental hospital there is a general emphasis on mental illness. The home being cleared of reminders of illness has a positive influence in promoting improved health and independence. The approach of stressing the aspects of normalcy in the patient is a healthy thing in the routine of his treatment, for it is wise to build as much as possible an atmosphere of health and strength. Treatment at home fosters a more bracing environment and affords a greater latitude of mental and physical expression.

For many patients the hospital atmosphere is not the best medium for recovery. Readjustment to normal living occurs more readily where normal living prevails. Many patients with mental disorders have the potentialities for health. The home setting is a more ideal place to test and realize these health potentialities.

There are a number of patients who do better with considerable freedom. Hospitalitis is very likely to develop in a patient who has a strong urge to get away from responsibilities and to be continually dependent. In such a patient even after a short period in the hospital, each attempt to prepare the patient for discharge may result in an exacerbation of symptoms. Many of these patients, having escaped from the stresses and demands of the outside world, resist therapy in the hospital and seek to perpetuate their dependency needs. For most of the patients there will be the necessity for work in the home, or for earning a living. Some patients may wish to prolong the irresponsible dependent status, being unwilling to deal with the tasks of housework, caring for the children, getting back to the job, or finding a new one. Treated as invalids and overtrained in dependence, they become conditioned to the routine of hospital life and chronic illness. This role of invalidism in turn brings about a yearning for a protected and sheltered existence, with the result they resent and resist any change.

The control of the patient's life in a hospital may be so restrictive as to be domineering and thus interfere with the working through of his neurotic patterns. There are many patients whose progress in a hospital remains stationary. Continuous hospitalization tends to vitiate initiative and negates the potentialities for normal healthy living.

The severing of family ties and casting loose from the family moorings is a painful event and a heavy psychological burden. Home treatment permits the patient to remain with his family, to stay on his job and in his normal routine.

Home treatment has a strong psychological effect in bringing about a greater infectious and therapeutic atmosphere. The patient remains in his normal environment during the treatment and gets well at home. The period of readjustment usually necessary for both the patient and his family following hospitalization is eliminated. Home treatment offers the patient an opportunity for influencing his environment and revising his environmental attitudes. On leaving the hospital the patient is faced with the problem of assuming responsibility for himself and for his relationships with and obligations to others.

The home plan of treatment opens possibilities for intensive individual psychotherapy on a scale usually not realized within a hospital. Supplementary treatment in the event of a relapse is often not feasible after the patient has left hospital. In the ambulatory method of treatment there is usually no difficulty in maintaining post-treatment supervision, in promptly resuming treatment

or in administering occasional subsequent treatments.

Lastly, the management of mental illness at home is preferable from a practical point of view. The extra-mural approach avoids hospitalization, eliminates commitment, saves time and money, and reduces the need for hospital beds and attendants.

Disadvantages of Home Treatment for the Mentally-Ill Patient

With the ambulatory insulin sub-coma type of treatment there is an increased responsibility on the part of the family. The patient may require help in eating and guidance in his activities.[3] Home treatment may be contra-indicated if there is lack of understanding of the clinical problems involved and an appreciable lack of capacity by the family to assume the necessary increased responsibility. Moreover, home treatment is hazardous and may be unwise if there is a clash of personalities in the home situation.

There are occasions when authoritative decisions can be beneficial to the patient in the hospital in working through distorted and unhealthy attitudes regarding authority. The physician may help the patient in working through these attitudes and re-orient him to a more fundamentally effective, socially determined way of life.

The ambulatory patient is not accorded the benefits of a well-rounded hospital program.

There are many patients who are unable to maintain an effective, healthy, tolerable emotional equilibrium at home but are able to do so in the hospital.

The initial improvement in the patient's health may prompt the desire to discontinue his treatment prematurely. This contingency is usually handled quite effectively in the hospital setting.[3]

A natural disadvantage of this type of treatment in the patient's home is the time factor. Several hours of the physician's attention is usually required. There is a tendency on the part of some therapists toward impatience with the more protracted methods of treatment and a preference for the more rapid and less demanding types of therapy.

The hazard of suicide in an unprotected environment is of paramount consideration and may present a serious drawback to home management of the mentally-ill patient. In cases in which the urge to self-destruction is great, or in which the patient's welfare or that of society is endangered, hospitalization is imperative. Vigilance at home is certain to relax after a period of continuous and strenuous observation. By and large, however, the danger and risk of suicide can be minimized by careful selection of patients, by early treatment and by constant vigilance and precautions on the part of the family.

Summary

The action of insulin is physiological and psychological.

Home treatment for the mentally-ill patient has certain indications and contra-indications as cited above.

In general the advantages of the ambulatory method of treatment outweigh its disadvantages.

In addition to its advantages over the more drastic forms of therapy, the ambulatory insulin sub-coma method of treatment has advantages that have a psychological, social and practical bearing.

Above all the treatment should not be given promiscuously and haphazardly and there must be a careful selection of patients based not only upon the individual patient, but also upon the family's capacity to assume the responsibility inherent in the home treatment situation.

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Thinking as a Disguise for Rearranging Prejudices

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A great many people think they are thinking when they are merely rearranging their prejudices.

William James.

Combining irony with megalomania in his typical manner, George Bernard Shaw once said: "Few people think more than two or three times a year; I have made an international reputation for myself by thinking once or twice a week." This superficially effective statement stresses the quantity of one's thoughts, and sorely underestimates the matter of their quality. Topping the fallacy is the implied assumption that deep thinking automatically produces profound results.

Somewhere, too, the aphorism seems to include the idea that if only the inertia that prevents thinking could be overcome, thinking per se would result in objective evaluation of objective facts. This idea is totally at variance with clinical evidence. The individual's typical thoughts are by no means regulated by such elevated principles. William James came very near to the facts when he defined the thinking of a great many people as a "rearranging of prejudices." There is wisdom, too, in Wolcott Gibbs' bland comment: "He wasn't exactly hostile to facts but he was apathetic about them." Facts as facts make little impression on the psychic apparatus.

Thinking is a *mental form of digestion:* we *"digest* a problem," *"absorb* a thought," get the "first *taste"* of a difficulty, as the language has it. This mental work does not start without an initial impetus; just as hunger is the signal for the intake of food, *discomfort at the failure to understand a problem or to master it starts the thinking-machine going.*

"Discomfort" is the outward manifestation. In inner reality, what is felt is—*fear.* This fear is a revival of the infantile situation in which everything new was felt as a threat. To counteract the threat, a "solution" of the problem presented by the new situation had to be found—and it always was found. It is true that the "solution" was as far from the facts as a technical engineer's description of a motor would be from that of a three year old. But any explanation—and this includes a wrong one—is better than no explanation at all.

Early in life the child learns the trick: answers must be found. *The advantage of having alleviated fear compensates for the incorrect interpretation.* The vehicle used in finding these "answers" is called thinking.

The fear that lurks behind "overwhelming external problems" is paralleled by another impelling force. In order to keep one's "peace of mind," the constant avalanche of internal reproaches emanating from the unconscious conscience (the superego) must be silenced; *everyone, therefore, lives on the basis of his specific pet defenses.* These defenses are secondarily cloaked in "rationalizations." A good deal of "thinking" is expended on bolstering these rationalizations, and it is visible in "prejudices" or "considered opinions."

Thus, "objective" thinking is *mortgaged* beforehand by two inner necessities, which together head the unconscious priority list: whatever is "mysterious" or cannot be understood must be "explained" by hook or by crook; rationalizations, covering the specific inner defense mechanism of the specific individual, have to be supplied, also by hook or by crook.

All this presupposes knowledge of the fantastic severity of the inner conscience. The inner torturer uses every riddle or unsolved problem as the basis for a reproach: "If you weren't such a passive weakling, you would know the answer." The reproach may be quite unjustified, but that is no deterrent, for "the superego is a torture machine."

(For elaboration, see the author's "The Superego," Grune & Stratton, 1952.)

The twin fears to be alleviated—question not answered, rationalizations not thought out—absorb an enormous part of the sum total of our thinking. A pitiful remnant remains to be used for other purposes.

Analyzing these other purposes, one finds that much of the thinking commonly classed as "objective" is still serving subjective aims. E.g., it is an accepted theory that thinking is the percursor of action. But these actions are under the influence of *inner* necessities. Constructing a daydream or a fantasy, or dwelling on a hope would be expressing an inner defense. Reading a book, watching a movie or television drama, would be a means of renouncing one's own thinking and substituting another's; there is a temporary identification with the other person's thought. It is known that the reader and listener is interested only if the problem dealt with corresponds to his own inner defenses. Moreover, even in thoughts centering around one's business and profession, these seemingly objective evaluations include a good deal of subjective matter. For the choice of one's profession was unconsciously determined, or (if an enforced or chance occupation is involved) inner defenses have been smuggled in.

Finally, all exaggerated and fearful preoccupation with what the future will bring, all dreary expectations, however disguised as interest in the local or international political scene, represent in some neurotics highly subjective masochistic problems.

*

What James so aptly called "rearranging one's prejudices," disguised as thinking, is but the *necessary exchange of defense mechanisms.* Defense mechanisms wear out and become unacceptable to the tribunal of conscience; they must then be retired for a time and substitutes used.

Since the propelling reasons for the substitution are unknown to the afflicted person, he is consciously going through a long siege of "thinking." The irony of the situation is that his "thinking" has little to do with—thinking.

Mr. A., a scientist, was bitterly biased against what he called "bitchy females." He claimed that he had acquired this antipathy during his marriage to a termagent. In this marriage, he declared, he had been the innocent victim of his wife's malice. He did not, of course, realize that he had chosen her —unconsciously on purpose—because he had "solved" his own infantile conflict with an overdose of psychic masochism. After a divorce from this wife, he went through a prolonged period in which he brooded about the evil disposition of the genus Woman. A few years later, he unexpectedly reversed his thinking, and began to discover that women possessed some pleasant traits. According to him, this was purely the result of "thought processes."—"One has to be objective," he explained. — He then married a woman whom he classified as "nice." Nevertheless, his skilful provocations soon turned her, too, into "a bitch of the first order." In this desperation, he entered analysis.

It soon became apparent that his "change of heart" and his opinions about women had little to do with thought processes. Since he was unconsciously stabilized on the rejection level, he had needed all the humiliation and defeat he got from his first wife. Since he was not consciously aware of the "pleasure in displeasure pattern," he considered himself an innocent victim of outside malice, and through deep "thinking" built up a "philosophy" that fitted in with his alibi. This state of affairs remained unchanged—as long as conscience permitted. His superego, being wise to the trick, constantly and unpleasantly reminded him of his real situation. When the repeated reproaches became a danger, the unconscious ego had to switch from the old defense to a new one. This switch accounted for the sudden and incomprehensible emergence of the theory of the "nice woman." Two defensive aims were thereby fulfilled. Conscience was temporarily appeased, and an old hope materialized in a new disguise, for by making sure to choose a new wife who could be provoked into cruelty, the old diet of masochistically enjoyed humiliation would eventually be restored. In effect, the ego said: "You claim that there are nice women; fine, I'll show you that they are all alike." Once more, the superficial defenses were exchanged, but the basis remained unaltered.

In court a lawyer asking an inadmissible question often yields to the judge's adverse ruling, not by giving up his line of attack, but by rephrasing the question. The same procedure is followed before the intrapsychic judge. This "rephrasing of defenses" has its conscious reverberation in specific types of "thinking." Since the process is fully unconscious in its origin and reasons, we typically leap to extremes in order to bestow either credit or blame. On the one hand, "objective thinking" is courted and elevated to *primum movens,* and the person involved pats himself on the shoulder for the "broad-mindedness" he has achieved through thinking; on the other hand, the malefactor is held to be relatively inexperienced with thought processes: "The art of thinking," mused H. L. Mencken, "is too recent an acquirement of man for him to exercise it continuously, or with anything resembling genuine virtuosity."

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Genital and Sphincter Symptoms In Multiple Sclerosis

(Frequency, Course and Response to Pancorphen)

JOSEPH WILDER, M.D.
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The necessity for better methods of evaluation of treatment in multiple sclerosis is generally acknowledged. Numerous attempts have been made recently to establish criteria for such evaluation. A procedure method used by the author is presented here. Selecting a triad of organ functions (bladder, rectum and genital organs) the reaction to and results of a given therapy on these symptoms alone is studied and recorded. One hundred and forty cases of unquestionable multiple sclerosis were selected which were used for other studies[25,26] as well. The treatment consisted of five intravenous injections of Pancorphen. This preparation was first studied by the author[27] in 1930. It consists of beef heart digested with hog pancreas plus one half of one per cent phenol. The treatment is characterized by outspoken neurologic focal reactions and almost absent systemic reactions.[25] This and the rationale of the treatment will be discussed later.

In the course of these studies, the author became impressed with the vast amount of contradictory and incomplete data in the literature referring to genital and sphincter disturbances. A discussion of these discrepancies and comparison with the observation in our 140 cases is the second purpose of this article. Special attention is called to the importance of these disturbances as initial symptoms of multiple sclerosis.

Of the three organs discussed only the conspicuous, torturing, humiliating, and prior to the era of antibiotics often fatal, bladder symptoms have received fair attention. There is general agreement that involvement of the bladder is most frequent; various statistics put incidence at 60-80 per cent (Marburg[15]). Researchers devoting attention to the subject note that a completely normal bladder in M.S. is rare even where there are no subjective complaints (Lewin and Taterka[14]). Bladder disturbances may be an initial symptom of M.S. Marburg[15] reports 1.3 per cent of such instances in his 152 cases; Stransky and Waldschütz[22] 19.1 per cent in men and 10.3 per cent in women in their 673 cases. Some authors (Marburg[15]) cite rare cases where bladder disturbances preceded other symptoms by as much as three years. This also has been reported in other neurological conditions such as spinal cord tumors (Foerster[3]). The frequently transitory character of these symptoms in multiple sclerosis is emphasized in many cases.

In our 140 patients we had a history of present symptoms of disturbed bladder function in 63 per cent (Table I). By far the most common complaint was retarded start of urination combined with frequency and

imperative urgency with only occasional loss of control or complete retention. Age is not a factor.

TABLE 1—*Percentage of Cases Affected and Onset of Symptoms in Relation to the Course of Illness.*

	Total	Prior to	With onset	In first year	After first year
Bladder	63%	3.7%	14%	14.8%	67.5%
Rectum	71%	21 (6*)%	11%	12%	56%
Potency	35%	9.5%	19%	—	72.5%
Menstruation	73%	32 (5**)%	12%	5%	51%

*after elimination of cases with lifelong constipation.
**after elimination of cases antedating M.S. by more than one year.

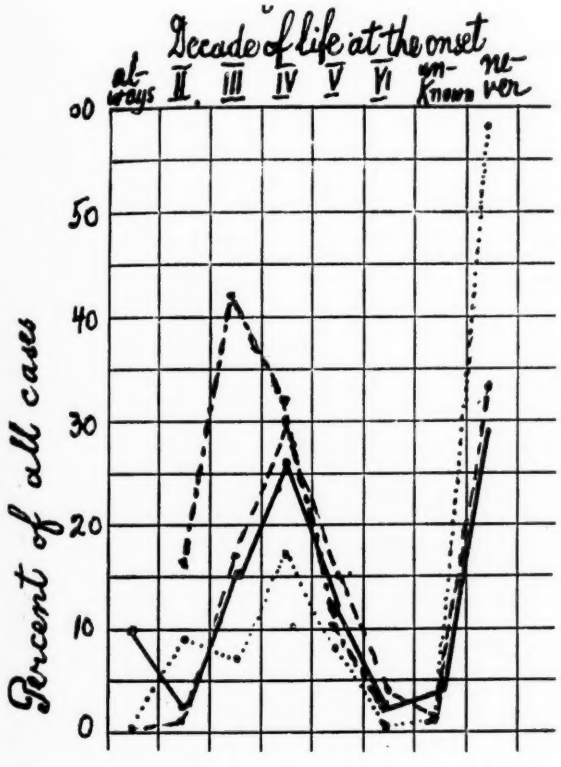

Fig. 1. Onset of the 3 symptoms: percentage per decade of life; comparison with the onset of disease (percentage per decade).

onset of disease
rectum
bladder
genital

Figure 1 shows that, as would be expected, the onset of bladder disturbances has its peak in a decade of life later than the onset of the disease itself. In four of the cases with bladder symptoms (or in 3.7 per cent) the bladder disturbances appeared prior to any other symptoms; in three cases by one to two years. Thus our own statistics reflect those in the literature. For details see Table I.

Quite different is the situation as regards rectal disturbances. Here the vagueness of definitions in both neurology and internal medicine combine to obscure the issue. Thus Morrison[17] writes in the Cyclopedia of Medicine: "In the term, constipation, there are included so many conditions that a satisfactory and comprehensive definition cannot be given." On the neurologic side, Stransky and Waldschütz[22] write in their monograph on M.S.: "A differential evaluation of initial disturbances of intestinal motility is practically impossible since they are so ubiquitous." No wonder, then, that most textbooks mention only the rather rare symptom of rectal incontinence (Wechsler,[24] Oppenheim[20]).

Stransky and Waldschütz[22] found rectal function normal in only 53 per cent of men and 57.4 per cent of women (597 cases). Marburg[15] finds "rectal disturbances" in the form of "intractable" constipation and occasional incontinence in one-third, Müller[18] in one-half of all cases. Hess and Faltitschek[9,10] and Haug[8] mention spastic constipation in 65 and 55 per cent of their cases, respectively. Sachs and Friedman[21] on the other hand, saw "no disturbances of rectal control" in any of their 141 cases.

Concerning constipation in general the medical literature mostly acknowledges the existence of the neurogenic constipation especially the psychogenic type. Morgan[16] claims that as much as 85 per cent of cases are of purely functional nature. Bockus[3] states: "Disorders of the nervous system are probably the most important factor responsible for the deficient reflex activity of the rectum." This is interesting if we consider in how many common neurologic diseases no such disturbances are mentioned. Morgan[16] asserts that constipation cannot be understood until more is known about the rectal innervation and its pathways in man. Alvarez[2] agrees with this: "Unfortunately in most cases of constipation the cause is not clear."

Spasm of the sphincter is occasionally

mentioned as a sign of a neurogenic rectum but the neurologist gets more help from the urologic methods in the diagnosis of various types of neurogenic bladder than from the proctologist in the case of the rectum.

The incidence of constipation in the general population, is given by Bockus[3] as 69.4 per cent, by Kantor[12] as 45.2 per cent, but both figures apply to patients consulting the gastro enterologist. It is fair to assume that this figure would be considerably lower in the general population.

In our 140 cases, rectal disturbances were more often present than the urinary, namely in 71 per cent of the total (Table I). They consisted mainly of more or less stubborn constipation frequently combined with incontinence for liquid stool which creates special difficulties in the use of laxatives. Compared with this, other symptoms like simple incontinence, anesthesia, inability to press, were rare. Repeated observations in individual cases were: a history of only one or two instances of incontinence; fecal impaction; defecation produced by manipulations in or around the rectum (a fact known in spinal cord lesions) or by suppositories of all kinds.

Not included in this series were cases which we observed at the Goldwater Memorial Hospital: prostigmin therapy and pulmonary edema following an enema (Adelman and Brun[1]). Age was not a factor. The cases with normal rectal function were 18 to 62 years old, an average of 32, with one-fifth of the cases in the age range of 50 to 62 years. Again, Fig. 1 shows that most cases start about one decade later than the onset of the disease. A special group comprising not less than 10 per cent of all cases, or 14 per cent of those with rectal symptoms consists of those suffering from constipation all their lives. Some patients noticed that it became worse with the onset of the disease or with a renewed bout. This accounts partly for the fact that not less than in 21 per cent of those affected the rectal disturbances antedated the neurologic manifestations of M.S. as compared with only 3.7 per cent in the case of bladder symptoms. If there were not sufficient other reasons this figure alone would arouse suspicion that factors other than multiple sclerosis were responsible for the disturbances. We can divide this 21 per cent into 15 per cent who had been constipated "all their life" and six per cent in which the constipation started one to five years prior to onset of the disease. It is this six per cent which should be compared with the 3.7 per cent of analogous bladder cases.

Another feature of the rectal disturbances is the large number of patients who cannot exactly date the onset of the constipation and speak only in terms of "years" or "several years" (14.3 per cent). This doubt was never evident with bladder disturbances. It can be concluded from this that it is constipation appearing later in life which should make us look to a neurologic cause. This is especially true when the constipation is accompanied by bladder disturbances. This combination appeared in 42 cases out of the 143, usually with other neurologic symptoms. Bladder and rectal disturbances may appear as late as the nineteenth year of the illness.

TABLE 2—*Combination of the 3 Kinds of Symptoms in the Course of Illness.*

Organs affected	*No. of cases*
Rectum plus bladder plus genital	41
Rectum plus bladder	39
Rectum plus genital	5
Genital plus bladder	6
Rectum alone	14
Bladder alone	9
Genital alone	7
None	19
Total	140

Table 2 shows the frequency in occurrence of the urinary, rectal and genital symptoms, single or combined in the course of illness. In only 19 cases were none of these organs affected. Among this 19, however, the average duration of the disease was only 6.7 years as compared with an average of 8 years for the 140 cases. Seven of the 19 were of recent onset, but the others were observed for years, one for 22, one as long as 27 years. We can draw the conclusion that although usual, the recto-genito-urinary disturbances are not always present in multiple sclerosis.

Disturbances of sexual function—potency, libido, menstruation, childbearing—in my

opinion also are only briefly mentioned in the neurologic literature. Wechsler[24] states that impotence in men and anesthesia in women are "not uncommon" in M.S. Marburg,[15] Guillain[7] hold they are "very rare," contrary to Cohen[5] who says they are just as frequent as sphincter symptoms. While Sachs and Friedman[21] found disturbances of potency in only 4.3 per cent of their 141 cases, Stransky and Waldschütz found in 158 men of sexually active age diminished potency in 16.4 per cent, in a few cases as an initial symptom. In 462 women they found in only five cases loss and in one increase of libido. Foerster,[6] in his discussion of spinal cord symptomatology, mentions the absence of erection and ejaculation in acute lesions; of erection (with ejaculation often preserved) in lesions of cauda and conus; priapism and absence of libido and orgasm in complete transverse lesions. Disturbances of menstruation are hardly mentioned at all. Genital disturbances in lesions of cerebral centers are well known. In M.S. we find, besides the symptoms mentioned by Foerster, initially increased libido, nocturnal emissions, etc. (for literature see Marburg[15]). Considering that all these regions, spinal and cerebral, are frequently the seat of plaques of M.S., we would expect more frequent disturbances than those mentioned in the textbooks.

As to menstruation, Marburg[15] and others mention that amenorrhea is very frequent in M.S. and appears often prior to the onset of other symptoms while Stransky and Waldschütz[22] "could not register at all any characteristic disturbances of female sex apparatus." Very little is known about the direct influence of nervous centers and pathways on menstruation and childbearing. Minor items of knowledge include such observations as normal birth with absent labor, pains in tabes or increased menstrual flow after section of the presacral nerve (Brock[4]). In cauda and conus lesions, Foerster[6] does not even mention any effects on menstruation. It seems that the significant influences of the nervous system on the menstruation are indirect: via the endocrine glands, metabolites and vascular system (Walthard[23]). We know that while certain functional psychoses like melancholic depression often cause cessation of menses, others do not. Such widespread brain lesions with psychosis as syphilitic general paresis do not influence menstruation.

If we add the number with menstrual disturbances (longer periods of amenorrhea, scanty or irregular menstruation) to those with sexual disturbances in men and women, ruling out dysmenorrhea and (somewhat arbitrarily) sterility and spontaneous abortions, we find only 22 cases or 27 per cent whose record is free from sexual disturbance in the broadest sense. (Table I.) In almost one-third of the 59 cases so affected the history of genital disorders antedates the onset of M.S. but this applies largely to menstrual disorders (almost 50 per cent antedating). Here we do not see an accumulation in the first year of disease as in the instances of sphincter involvement (12 to 14 per cent): only three patients (5 per cent) found that these genital disorders started during the first year; the remainder believed that the appearance of this type of disorder was distributed throughout the following twenty years of disease. Fig. 1 illustrates this. It also shows that differences in the duration of illness may be a factor accounting for the discrepancies in various statistics.

A breakdown of the figures shows that impotence was noticed in 18 and loss of libido in three out of 60 males. This is 35 per cent, which is much higher than is reported in the literature (Table I). In two of the cases it was a recurrent phenomenon associated with new bouts of the disease (in one case four times). Impotence in one case and loss of libido in one case started prior to other symptoms (9.5 per cent of cases so affected); for other details see Table I.

Among 81 women only one case of loss of libido was found starting with the onset of other symptoms. Other disturbances refer to menstruation. Eight cases had at the time of observation premature amenorrhea at an early age (26-43). Three of them also had a long history of previous periods of amenorrhea of one to three years duration, two repeatedly with new bouts. In one case amenorrhea started one year prior to the onset of other symptoms. Other menstrual irregularities have been noted in 24 cases. That makes a total of 40 per cent with men-

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strual symptoms at the time of observation. Table I combines past and present history and gives further details. (Only three cases started within one year prior, the rest four to 23 years prior to the onset.) In 56 per cent of those affected the disorders were first noticed within one to 21 years after the onset of illness. If it is assumed that only those cases in which the difficulties started with or after the onset of manifest M.S. are symptomatic, this would leave out about one-third of the cases of menstrual disturbances in need of an explanation. It is a high percentage of a premorbid disturbance. Constipation in otherwise healthy people is certainly a more common phenomenon than major menstrual disturbances. The former can be easily explained by the restraints which culture and civilization impose on the act of defecation. And yet only 21 per cent of rectal (as compared with 32 per cent menstrual) symptoms antedated the manifest onset of M.S. We must add here the fact that a high percentage of married women in this series were never pregnant or had only one to two miscarriages and the two cases examined gynecologically showed hypoplasia of the genital organs. The menstrual irregularities were often progressive through the years.

All this raises the question whether the disturbances of menstruation may not have some relation to the causative factors of multiple sclerosis. In a short paper I published with the gynecologist R. Joachimovitz in 1925[11] we found normal menstruation prior to the disease in only 46 per cent of our 78 cases. In 34 cases menstrual disturbances appeared at the onset or in the course of the disease (seven had amenorrhea with the onset of illness). Only six out of these 34 had no bladder disturbances. Sixty-five out of 111 women were never pregnant. In 34 out of 37 cases examined there was distinct infantilism or hypoplasia of the genital organs —a finding which Kloeppner[13] could establish only in 6.7 per cent among 7500 women attending a gynecologic hospital. In discussing these and other data we could not answer the question whether this infantilism represents a constitutional anomaly predisposing to multiple sclerosis, a consequence of multiple sclerosis, or a lesion of an endocrine gland due to the same noxe which produces the neurologic symptoms of multiple sclerosis. At any rate, multiple sclerosis is to be kept in mind in the examination of menstrual irregularities, amenorrhea, sterility, genital infantilism. If we think that these genital anomalies create or increase the disposition to multiple sclerosis their treatment would assume added importance. Parallel investigation in men has not been made except for the fact that the feminine type of hair distribution in man, as well as masculine type in women are particularly frequent (Pulay,[20] Joachimovits and Wilder,[11] own observations).

Results of and Reactions to Therapy

We do not exactly know the rationale of Pancorphen therapy. Prolonged spasmolytic, particularly vasodilating, action is evident. Whether it is mainly a micro-protein, a desensitization, an enzymatic or hormonal treatment is an open question. Occasional therapeutic results can be observed in esophagospasm and cardiospasm, vascular spasms of all kinds, spastic constipation, etc. (Wilder[25]). The reactions usually start several hours after the intravenous injection and last 1½ days or more. The patient may feel heat, lassitude, sleepiness and the old and often new neurologic symptoms become aggravated temporarily or (sometimes) improved while latent or cured symptoms may temporarily reappear.

Table 3 shows the percentage of cases in which improvement was obtained by a single series of 5 injections; that in sphincter disturbances recent symptoms respond more frequently while in genital disorders the response was poor.

TABLE 3—*Percentage of Improvements in Relation to Duration of Symptoms.*

	DURATION			
	always	not always	over 6 mos.	under 6 mos.
Rectum	20%	40%	57%	81%
Bladder	—	50%	54%	77%
Impotence	—	22%	25%	21%

Rectal Disturbances: In our series of 140 cases, there were 15 persons who had been constipated all their life. Only three improved on P.C.P. The best improvement was achieved in one case where the constipation became worse in the last year. In 53

patients who developed constipation before or during the course of the manifest M.S. a high percentage showed various degrees of improvement after P.C.P. In those who did not respond, the symptoms were of longer duration. In cases with incontinence alone, three out of five showed some results. One case of rectal anesthesia did not react. There were only five cases of "spontaneous" remissions (Wilder[28]) of rectal disturbances noted in this series. In three instances the rectal disturbances became worse following P.C.P. and one case with no previous disturbances developed incontinence. Often, but not always, the good results can be repeated. Relapses in rectal disorders were just as frequent as with other symptoms; a single series of five injections does not give permanent improvement in M.S. There is often little similarity between the course of rectal symptoms and other symptoms including bladder and genital symptoms. Sometimes other symptoms improve while the constipation remains unchanged.

Bladder disturbances. There were 78 cases with retention of which 39 improved and 39 showed no therapeutic results. Among those with positive response in 46 per cent the disturbance was of recent origin and in those refractory to treatment only 23 per cent evidenced the symptom for a short period before treatment. One case with loss of sensation did not improve. Among those with normal bladder, one patient developed disturbances during therapy; one had an imperative urgency lasting four days after an injection; one had a retention for two weeks after a pure phenol injection. We must not forget that some of the negative cases have probably "subclinical" (latent) disturbances (Lewin and Taterka[14]). What has been said about the rectum in reference to repeated treatments and relapses holds true for the bladder. Spontaneous remissions or temporary disturbances seem, however, to be more frequent in bladder than in rectal symptoms (12 instances noted).

Genital disturbances in the male. Only in four out of 18 cases of impotence was the treatment effective, three of them recent cases. No case of loss of libido (two recent) responded. However, in cases not included here we had a number of such remissions. In all but three of the refractory 14 cases of impotence the symptom was recent. In repeated treatments, relapses and spontaneous remissions appear as in the cases of rectal and bladder irregularities.

Disturbances of menstruation and gestation: These cannot be parallelled with disturbances of potency. Therapeutic results in this series were poor; only one success. I feel, however, that this gives a too pessimistic picture. In several cases outside this series I have seen prompt response in amenorrhea which had lasted up to two years.

The following case reports will illustrate the effects of treatment on the recto-genito-urinary symptoms, particularly on constipation.

Case 22: A 35 year old male developed in the nineteenth year of the disease marked constipation, diminished sensation in the rectum and slight urinary incontinence. Potency remained normal. After the second injection of P.C.P. (¼ cc. intravenously) there was marked improvement in constipation. Six months later there was a relapse and the constipation returned. During the next series of injections there was a reaction in the intestinal tract after every treatment. The days following the first injection, ¼ cc., there was spontaneous bowel movement; the third day after the second ¼ cc., he had colic and diarrhea; after the third ¼ cc., diarrhea followed the use of a mild laxative that never had that effect before and the next day, diarrhea followed the use of a glycerine suppository. Similar phenomena were observed after the next two injections.

Case 49: A 28 year old female had been ill for 12 years. With the onset of the disease there was scanty and irregular menstruation for one year. After 11 years she developed together with other symptoms, urinary retention and constipation. She reacted to the first injection, ¼ cc. of P.C.P., with constant urgency to defecate lasting several days and feeling of tightness in the intestines. After the second treatment she had complete urinary retention for one day requiring catheterism, and tenesmus with mushy stools. To the third injection she reacted with urinary retention. After 8 injections the bladder became normal but constipation with incontinence after laxatives persisted.

Case 93. A 41 year old female sick for 3½ years. Incontinence of bladder and rectum right from the onset. The latter turned subsequently into urinary retention and constipation. She had no menstrual trouble except during a course of typhoid vaccine when she had temporary amenorrhea. After five injections of P.C.P. both constipation and urinary retention improved. She reacted with urinary urgency to every injection of P.C.P.

Case 133. A 31 year old male. Onset of disease four years prior. Three years ago new bout, this

time with impotence, constipation, and later also urinary retention which improved after 2½ years. The response to P.C.P. was as follows: After the first injection, ¼ of one cc., slight urinary retention, increased constipation, two erections; after the second, same dose, constipation improved; after the third and fourth, ¼ and ½ of one cc., several erections; after the fifth, ¼ of one cc., severe neurologic reaction with increased urinary frequency, daily erections and no change in the previously improved constipation.

Conclusion and Summary

In checking the efficacy of Pancorphen in multiple sclerosis (heart-pancreas extract with phenol), the author used among others the method of following the course of sphincter and genital disturbances. Statistical data in the literature are contradictory. Special attention is called to the occurrence of disturbances of urination, impotence, loss of libido, constipation and menstrual disturbances as precursor of other neurologic symptoms. This was the case in 3.7 per cent of bladder, at least 6 per cent of rectum, 9.5 per cent of potency, and at least 5 per cent of menstruation symptoms.

The frequency of bladder disturbances in this series of 140 cases was 63 per cent; of rectal disturbances 71 per cent. The latter figure included chronic constipation which is discussed here in its relation to M.S. Male genital function was disturbed in 35 per cent, menstruation in 73 per cent. The role of the frequent menstrual disturbances and genital hypoplasia in their place in the etiology of M.S. is briefly discussed.

The author describes the characteristic reactions of these symptoms to single injections of Pancorphen and discusses their therapeutic response. Of those who were constipated all their life, 20 per cent improved; of those who developed constipation in connection with other symptoms of M.S., 40 per cent improved; bladder disturbances improved in 50 per cent of cases; impotence in only 22 per cent; menstrual disturbances in only one case. As to the genital symptoms results were better outside of this series. Symptoms less than six months old responded much better than older symptoms.

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The Physician's Responsibility in the Prevention of Suicides

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Two papers on the problem of suicide[1,2] presented before the California Medical Association in the past year indicate some medical interest, but in general neither physicians nor laymen realize the grave importance of suicide as a cause of death.

Extent of the Problem: In the nation deaths by suicide rank ninth in mortality causes and in certain areas, in the age brackets 55 to 69 years, it may rank as high as fourth or fifth. As a state California ranks about seven per cent above the national average, which on 1949 census figures is computed to be 11.4 deaths per 100,000 population, as compared with 18.1 deaths per 100,000 Californians. In San Francisco the rate is 28.0 deaths per 100,000 population. From the Golden Gate bridge, opened in May 1937, there have been 136 known suicides; and from the Bay Ridge, opened for traffic about 7 months earlier, 34 suicides, as of January 31, 1954.

These national and regional statistics do not represent the entire problem. Automobile and other accidents show a large number of cases of accident proneness and include a number of suicides and suicidal attempts. Families succeed in hiding many suicides. Other suicidal attempts are never recorded in vital statistics, nor are the many deaths of those who die weeks or months after the date of attempt. In addition, as my private file of clippings and case histories shows, perhaps a sixth of those who commit suicide or make the attempt try to kill or do kill beforehand from one to five other persons. Suicidal persons endanger others, oftentimes children. Complete figures would doubtless reveal as many as 50,000 suicides a year. Additionally, there are about 5 attempts for each successful act, or some 100,000 suicidal attempts each year. These persons offer an especially good opportunity for preventive work.

Physician's Place in Preventive Work: Unfortunately, most patients hospitalized after suicidal attempts receive emergency treatment and are dismissed without further investigation. Stomachs are washed or surgical repairs made, but rarely are psychiatric evaluation and definitive treatment prescribed although there is evidence that the patient had been in ill health or had grown despondent. If the physician does not see that psychiatric consultation is carried out the patient often will make another and successful attempt.

It is ironic that physicians who are greatly concerned about medical and surgical fatalities do not seem to feel the same responsibility for a patient's self-inflicted injury. There is a tendency to feel that the individual who wishes to die should be allowed to do so. Since the psychiatrist believes that suicidal deaths are preventable a fatality necessarily reflects on his understanding and vigilance in the care of the patient. Sufficient alertness, proper treatment and hospitalization under certain conditions are able to prevent most suicides. Of course, a patient determined to die can carry out the act despite the most rigid precautions, but this is the exceptional case.

The physician, also, may sometimes increase the patient's suicidal wishes by failure to understand. Arguing, cajoling or jollying the patient may only add to his despair of getting any real help. Again, the physician may refuse to believe that the patient means his threats, and may send him off on a trip to forget his troubles. Every threat should be taken seriously until the physician by tactful discussion is able to evaluate the patient's condition. Thus, the physician's duty comes down to one of mental diagnosis.

Signs of Suicidal Risk: The physician in taking the patient's history must look out for description of emotional changes within

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the person, especially since the individual often complains merely of physical symptomatology. Thus, a functional complaint not backed up by true organic findings should make one suspect depression. To make the diagnosis one must look for signs of reduced energy output, changes in interest and the way things appeal to the patient, failure to get the usual stimulation out of things. Nor is psychogenesis always present, since many depressions are spontaneous, especially in the manic depressive group. Indeed, about half of such patients have recovered from earlier attacks, regardless of the treatment received.

Some early diagnostic signs or symptoms of depression are the following:

1) *Insomnia:* Particularly characteristic here is early morning awakening, with later on an inability to fall asleep. The patient usually worries about sleeplessness and blames this for all his ills. Actually the insomnia is caused by the depression, which produces disturbing thoughts so that he gets up, paces the floor, smokes, and frets. These highly significant signs denote oncoming severe depression.

In prescribing barbiturates there is a danger of addiction developing and frequently suicide. In many the use of these drugs reduces inhibitions and thus increases suicidal risks; in others it may cause confusion resulting in an accidental overdose. Sometimes the physician inadvertently increases the hazards by prescribing too large an amount. Again, patients may deliberately accumulate a supply by canvassing several physicians. About 20 per cent of all suicidal attempts are made with barbiturates, and these drugs account for more than 1000 deaths a year.

2) *Anorexia:* With the onset of depression patients lose appetite and interest in food with subsequent weight loss. They often complain of gastrointestinal upsets, and upon inquiry will say that "all foods taste the same," or "like sawdust." They have marked constipation and use laxatives or enemas for a condition that results simply from a small residue in the bowel. Adequate checking will usually show an inadequate, low calory intake, despite the patient's claim that he eats enough.

3) *Loss of Interest and Drive:* The patient usually will admit that formerly pleasurable interests no longer appeal to him. Gradually a deeper depression engulfs everything with loss of feelings for reading, hobbies, recreation, and other members of the family. The patient may just sit around and brood or mope. As a rule there is loss of libido or sex drive; the degree depends upon the depth of the depression and patients concerned over this problem are especially prone to suicide. If the patient covers up his feelings family informants can often confirm his lack of interest and drive. All symptoms are exaggerated in the morning and lift toward evening.

4) *The Mood Reaction:* Many patients will not admit frank despondency and will insist that they feel fine. Only careful questioning can bring out discouragement, disgust, complaints about some vague physical condition like insomnia etc. The occasional patient in a depressed mood may admit feeling bad but it requires tactful inquiry to elicit the true undertone of depression.

Establishment of Diagnosis: Once the presence of depression is ascertained, one must determine its depth or degree and differentiate between benign and more malignant forms. If the patient is not too hopeless, and if no definite threats or an overt attempt have been made, treatment by outpatient or office therapy is usually safe. Otherwise, immediate hospitalization, including psychiatric consultation, is the safest procedure.

Psychological tests like the Rorschach often help to assay the risks of suicide. Something can be learned from the method of an actual attempt. Minor self-inflicted injuries as wrist slashing or taking lethal drugs indicate the patient's desire to modify his environment rather than to alter his final status. He creates a stir and gets the satisfaction he wanted in thinking, "They'll be sorry." Use of more violent means puts the patient in the malignant group; very bizarre ways of self-destruction are invented by a frankly psychotic patient. If the nonpsychiatric practitioner feels unable to evaluate the case adequately he should advise psychiatric consultation and make sure that the patient's relatives arrange for it, since pa-

tients are too indecisive to do so themselves.

Handling of the Patient: Milder psychoneurotic depressions, then, may be treated by outpatient care through psychotherapy. All threats and gestures toward suicide, however insincere, are not to be taken lightly or dismissed, since the patient has already hit upon the device of turning his aggressions inward as a solution to some distressing problem. During investigation and treatment the physician must note carefully whether the patient begins to feel hope of working out his problems with the doctor's help and gains confidence that the depression will gradually lift. If not, the physician should refuse to accept further responsibility unless the family cooperates by placing the patient in a protective environment. In completely uncooperative cases a responsible member of the family should take the legal measures necessary for custody of the patient, with evaluation and treatment.

Treatment of Depression as a Preventive of Suicide: Modern treatment of depression has attained considerable success in recent years. Treatment depends on the degree of emergency and the type of depression. If the seemingly mild psychoneurotic depression does not respond in a reasonable period or if the suicidal hazard increases, the patient must be hospitalized.

Electroshock therapy is a specific treatment for individual severe attacks of depression and is also a life-saving procedure as a preventive of suicide. It must be administered intelligently, with close attention to each case and with careful follow up treatment by psychotherapy and adjunctive measures in order to insure against relapse. Prophylactic shock therapy is also used successfully to break up recurrent types of depression and perhaps to interrupt the manic depressive cycle. Occasionally prefrontal lobotomy is indicated in chronic, relapsing types.

When a suicidal attempt has occurred, emergency treatment requires hospitalization and symptomatic treatment of the injury, followed by definitive psychiatric treatment. Since so many attempts are made with barbiturates, specific therapy for coma must be readily available. Although treatment for barbiturate coma is not wholly satisfactory, we have found our treatment method[3] to be fairly adequate and at times lifesaving. A large dose may cause a condition that fails to respond except to treatment with the artificial kidney, a device at present available only in a few places. Subconvulsive electrostimulation and intravenous injection of metrazol both counteract the cerebral depressing action of barbiturates and preserve respiratory function. We often combine the two methods.

The following case histories illustrate types of depressions, all suicidal risks, with the results of treatment.

Case 1: Psychoneurotic, Reactive Depression. A man of 26 who had stopped work two weeks before the consultation insisted he had no money or family worries. He discussed people close to him except for his wife rather freely. His lack of expression and curt words about her were pointed out but he continued to deny feeling angry at her. At the next interview, however, he reported his surprise to learn that although he thought he had accepted her viewpoint, he now realized his bottled-up resentment and anger at ther opposition. He had wanted to give up his present job, the best paying he had ever had, to return to a small town and a former job that he liked better. As he was able to express and discuss these problems freely, the depression lifted and he was able to resume work.

Here a simple technic of ventilation enabled the patient to work out his aggression and hostile feelings instead of turning them against himself and increasing his suicidal drive.

Case 2: Involutional Depression With Suicidal Desires. A woman aged 57 suddenly felt that life was not worth living. She was given estrogenic hormones by the family physician but they made her even more restless. When she reported "awful fears" about picking up a knife or thoughts of turning on the gas, the doctor said she was getting hysterical and advised her to take a walk or put her "head in cold water." He finally referred her for further medical treatment to an internist, who in turn advised psychiatric consultation when she expressed her fears about insanity.

Here, the patient frankly related her fears in a typical case of involutional depression; yet the physician prescribed hormonal treatment despite the fact that this is valueless as a cure for depression.[4] In the two-month interval the patient might well have carried out her suicidal threats.

Case 3: Involutional Depression and Barbital Coma. A man of 53 was hospitalized in August 1952 because of barbiturate coma. He was areflexic; blood pressure was 95/60, respiration shallow and

pulse thready. The patient regained consciousness after two hours of gastric lavage and subconvulsive electrostimulation, and was transferred to the psychiatric department. A day later, though still confused, he stated his suicidal intentions.

Psychiatric evaluation indicated a fairly typical involutional depression in this man stemming from loss of his position due to a change in plant management. With failure to obtain a satisfactory new job and money difficulties, the patient became, over a four year period, increasingly despondent, and for the past month had talked of suicide.

A month's hospitalization, during which he was given eight electroshock treatments, was followed by office interviews. Gradually he began to establish emotional stability, obtained a good position and adjusted his financial problems. A year and one half later he showed no signs of relapse.

In this case it is believed that earlier recognition of the signs of depression might have prevented a complete breakdown and serious suicidal attempt.

With these cases in mind, I should like to recommend steps for prevention of suicide and the responsibility of medicine in this respect:

1. Education of physicians and laity in ways of preventing suicide, especially in early detection of depression and its relation to accident proneness; more stringent regulation of prescriptions and sale of barbiturates.

2. Organization of lay associations devoted to education in these problems and encouragement of persons with suicidal impulses to come to psychiatric clinics for consultation.

3. Education of police in how to deal with suicidal attempts.

4. Education of hospital administrators in recognition of the need of psychiatric consultation and treatment for persons hospitalized after suicide attempts.

5. Research on case records, in order to increase knowledge about personality types and motives and to apply methods of prevention.

6. Education of nonpsychiatric practitioners on recognition of psychotic depressions and on effective referral of noncooperative cases.

7. Registration of suicidal attempts, with reports to public health officers, as in other reportable diseases, with follow up attention by public health nurses, to insure that the patient receives adequate psychiatric care.

The high rate of suicide and of serious suicidal attempts justifies concern on the part of the medical profession and of the public. Only through better understanding and cooperation among physician, patient, family and the community can research point out ways toward the prevention of suicide.

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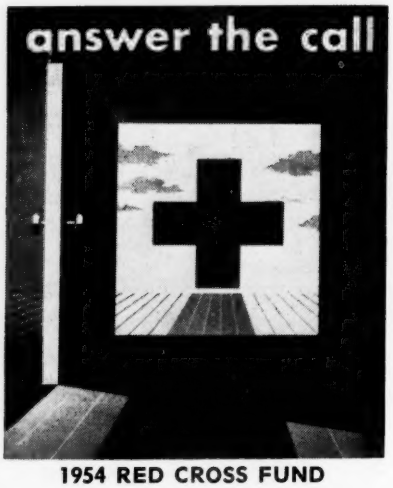

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Ichthyosis Treated with Hypnosis

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Introduction

A case of ichthyosiform erythrodermia treated with hypnosis was reported recently by Mason.[1] In the textbook on hypnosis in modern medicine published by the present writer,[2] McDowell in his chapter on dermatology listed a number of skin disorders which have been treated with hypnosis. A case of ichthyosis simplex and hypnotherapy will be outlined now with brief comment on its implications.

Ichthyosis, fish skin disease, or xeroderma is considered a congenital disease for which some patterns of inheritance have been described. Based on Gates,[3] an outline of genetic features was published not long ago.[4] The rough and scaly skin is readily recognizable. All or most of the body may be involved in ichthyosis simplex and extensor surfaces are believed to be more generally affected. Skin elasticity may be impaired. Ichthyosis may be worse in cold weather, better in warm, and the latter may be associated with increased perspiration. A dermatological consultant,[5] commenting that a specific cause for the abnormality has not been established, recommended vitamin A as effective at times and salicylic ointment as helpful. Many types of ointments and medications have been employed. Apparently there is no specific remedy.

Background

A thirty-three year old man sought treatment for ichthyosis of life-long duration. His entire body was affected to varying degree. His face was affected least. The scaling was worse in winter, better in summer and the changes constituted a repetitive, consistent and, for him, a readily predictable pattern. The ichthyosis had been specifically medically diagnosed as such in 1932 and early in 1953. Maximum spontaneous improvement would be reached at a temperature of 70 degrees. Maximum scaling would be achieved at 40 degrees. Heavy scaling would appear at about 55 degrees. Improvement would be slow as the temperature would rise. Scaling would be rapid as the temperature would drop toward the 55 and then the 40 degree level. The patient, aware of the fact that there was no specific treatment for ichthyosis, but knowing about increasing interest in psychosomatic illness, decided to seek psychiatric consultation with hypnotherapy in mind because he had read from time to time about hypnotic investigations. Despite this approach, the patient was not interested in a psychological investigation of his functioning in an effort to integrate this with the skin disorder. He wanted a relatively simple symptom approach to his problem without study of psychodynamics.

The patient appeared pleasant but reserved during interviews. He was alert, attentive and cooperative. He appeared to be above average in intelligence, although his formal schooling was limited. He treated the hypnotherapy as essentially experimental and displayed an attitude of cautious skepticism regarding any results. His tendency was to reserve decision about a possible change rather than to acknowledge readily or over evaluate skin alterations. His self-evaluation was in terms of developing ideas and opinions which became set and which were hard to change. An impression was gained of rigidity in his character structure. Treatment was started when the temperature was about 70 degrees and his skin disorder at a minimum, consistent for the time of year. Treatment continued until the temperature dropped to 40 degrees and below, at which time the disorder would have involved maximum scaling. The patient was seen at intervals of once each week or two, except for one month at the beginning.

Treatment

During the initial hypnosis, when an ocular fixation technique was employed for induction, attention was centered on the patient's awareness of his body movements and sensations in order to emphasize the involvement of physiological aspects of his

functioning and to incorporate into his thinking the role of somatic processes as an integral part of the hypnotherapeutic work. The emphasis on physiological mechanisms, in connection with the modus operandi of the hypnosis and the resulting skin alterations, was not treated with a view to scientific accuracy in the specific approach involved in the suggestions given him. Rather it was intended to put into words a series of ideas which might be psychologically significant for him and as a result of which the necessary physiological changes would then be involved through whatever psychobiological functioning may in fact take place. To do otherwise would constitute self-deception because the psychophysiological processes are certainly obscure. Although the patient seemed somewhat interested in psychological issues in general but in highly simplified form, it was felt that stressing possible psychodynamic implications in this disorder would be contrary to his basic interests and wishes, and would negate the possibility of favorable response.

When the patient centered attention on his right hand he noticed a finger flutter. When watching for hand movement or pressure change the palm of this hand began to feel warm. The left palm was cooler. The warm feeling disappeared in a few minutes. He could not duplicate this sensation in the left hand. While this was transpiring he felt both of his feet becoming warm and his right forearm twitched. He was told that the feeling of warmth involved local blood vessel dilation and good circulation was linked with improved skin nutrition and normal skin. It was pointed out that the discrepancy in the palm sensations might possibly but not necessarily indicate that different skin areas might respond to treatment with varying degrees of rapidity. He was given suggestions then for over-all skin improvement. He was told the suggestions would operate unconsciously and that higher brain centers would channel then to lower centers from which impulses would be distributed along appropriate nerve roots to the skin and its blood vessels. Nutrition would improve and beneficial changes would ensue. The suggestions would begin to operate as he continued in the hypnosis which was then deepened as further suggestions were given for more rapid induction and deeper states on future occasions.

At the second interview one month later, there was essentially no change. He described how he had attempted to resist the first induction and he was encouraged in his cooperation and responses. During this hypnosis the previous suggestions were used in essentially the same way and the element of the patient's experiencing subjectively a long time passing during the hypnosis was employed to reenforce the suggestions.

At the next session there was some improvement but he cautiously indicated that the weather was warm although, as mentioned, he would in any event have been experiencing his maximum improvement at this time. During the hypnosis he was complimented on his improvement and the beneficial effect of warm weather was linked to hypnotherapeutic effects on the basis of blood vessel dilation and improved nutrition. The hypnosis effect could then supplant weather effects so that weather change could take place as usual while the body changes wrought by the hypnosis could continue to help his skin. Although emphasis would not ordinarily be placed on deepening the hypnotic state, it was done at this time and from time to time because it appeared to have some inner psychological significance for the patient.

The weather cooled but improvement continued. It involved his body as far down as his waist, including his arms. He said this had never happened before. He was pleased but quite cautious and said, "It's a good start." Since the patient had believed there was of necessity a direct relationship between "depth" of hypnosis and therapeutic results, this and related issues were discussed with him. Previous suggestions were repeated under hypnosis and he was told other parts of his body would show improvement too.

With further cooling his skin nevertheless did not grow worse. His right foot improved a little. Also the whitish scaling between his fingers improved. Under hypnosis, continued beneficial change as an outgrowth of current betterment was stressed along with the beneficial calming effect of the hypnotic

suggestions on cortical functioning with its influence on subcordical centers, and impulses dispatched to the skin through nerve roots. Improved circulation and skin nutrition was reemphasized.

At the next meeting it was noted with interest that a discrepancy in skin alterations was reported. The upper part of his body was a bit worse than before, although better than usual for current weather conditions. Both feet, however, had improved. Under hypnosis the capacity for reversibility was used as an example of the very possibility of skin change, and suggestions given for over-all improvement, although the speed of such change might vary with different skin areas. Furthermore, there was encouraged a healthy optimism in an effort to help produce skin alterations. When the patient was seen again, there was no change.

Following this, his feet, waist, and chest improved. There was less favorable change on his legs which always would have the heaviest scaling. Hands and forearms seemed to change for the better, out of proportion to upper arms, judging by past years. Hands and feet were improved to a degree out of proportion to the scaling usual for him at current weather conditions. The patient continued to regard changes with caution and was decidedly careful not to overvalue subjectively the changes that were noted. The hypnotic suggestions were given with several repetitions.

There were no changes at the next two sessions. At the second of these interviews it was suggested under hypnosis that further change could depend on the degree of his wish for change. This was done in the event that attitude might possibly play a significant role. Then as the temperature dropped to the point where his skin would show maximum scaling, the ichthyosis grew more marked, but not to the extent repetitively established in preceding years.

The next hypnosis session was divided into two parts. In the first he was instructed that previous suggestions regarding changes and mechanisms would continue to operate and that his body would withstand the impact of the weather change and show further improvement. In the second part the patient was given instructions regarding his experiencing during the hypnosis the passage of time amounting to days and weeks while visualizing skin improvement as the weather grew colder and colder. This was done to reenforce a reversal of skin-weather alteration. The patient continuously affirmed the visual-sensory hypnotic experience. There was no further improvement when he was seen again and he revealed his feet and forearms to be better than usual for this season, and to a lesser degree the upper part of his body. Hands were not as good as forearms. Legs and thighs showed no improvement. Over-all improvement was approximately fifteen to twenty per cent. During the hypnosis there was encouraged a change in attitude from "healthy skepticism" to an actual strong wish for change. Within two weeks the upper part of his body including face, arms and hands improved. He achieved at this point a maximum degree of improvement, about forty per cent, over what he had been accustomed to in previous seasons.

He reported two dreams at this time. In one, his arm had an area of normal skin surrounded by an area of ichthyosis. In the other, he was in hypnosis and then emerged from it. He realized after he had come out that he had forgotten to remind me of the fact that we were to work on deepening the hypnosis in order to help him further. Also, I myself had forgotten to do this. It was suggested to the patient that his dreams might indicate mixed feelings about the hypnosis and about his wanting help for his skin condition. He agreed that this could be so. It was suggested further that he might feel the use of a psychological technique, if it were to help, might mean to him that psychological factors were involved in his skin disorder. He might not wish to believe this and he might feel uncomfortable if others were to gain this impression. His reaction to this indicated apparent agreement. He was reassured on this point with an explanation of the role of psychological issues in general in a large variety of illnesses. In view of his dreams, the hypnotic session stressed deepening of the hypnotic state itself with confirmation by him of the experiences induced.

The temperature was in the thirties. There was no improvement beyond the previous

session. There was no major modification in the hypnotic session. When seen again, there was still no further improvement. In discussing the hypnotherapy and the patient's skepticism he mentioned that when he develops "fixed ideas," they are hard to change. During the hypnosis the patient was told that on the basis of the patient's excellent results thus far, the therapist was confident his skin would improve further. When seen again, the upper part of his body, including the arms, had improved a little more. Legs and feet were just a little better. There was no further change in his thighs. He claimed his attitude could be the key in his change because he felt more optimistic since the last session.

For this point in his treatment, when he would be experiencing maximum scaling, there was a forty to forty-five per cent over-all improvement. He asked about training in self-hypnosis in order to assume personal responsibility for further treatment and he was taught how to achieve this.

Comment

Although this case is of interest as a study in clinical improvement, there are a number of points worthy of special attention and several questions which may be introduced. Despite the betterment of the skin condition from first to last interview, some irregularities occurred. At one stage at least, a decided exacerbation occurred to offset the comparative beneficial changes which had set in. Changes were also seen to vary in different skin areas, although the over-all trend of lower body showing greater scaling than upper body did continue. Despite comparative improvement on a seasonal basis, the hypnotherapy in this instance did not completely counteract weather effects. At certain times, however, despite over-all temperature change, such counteraction did occur. It appeared that the patient's attitude regarding the very possibility of skin change might have influenced such alteration to a degree even greater than it was possible to investigate in this case. Basic ingredients of personality functioning in possible relation to ichthyosis is an unknown and may be clarified in time if any such relationship truly exists.

It is clearly impossible to say how many people with ichthyosis may benefit through hypnotherapy, nor have further modifications in technique been investigated as yet. How long can improvement continue? Can self-hypnosis be as effective as hetero-hypnosis? Would self-hypnosis be of help if introduced early in treatment? In subsequent sessions would similar hypnotherapy duplicate these effects and if not, what would the results be? Can hypnotherapy be dispensed with during future seasons? All of these, plus additional questions, are yet to be answered.

Perhaps the most significant aspect of a case like this is the fact that it points the way to the possible desirability of introducing the use of hypnosis into an experimental setting for the study of ichthyosis and other skin disorders in relation to clinical results and laboratory investigations of basic biochemistry and physiology.

Summary

A thirty-three year old patient with life-long ichthyosis showing consistent, repetitive, seasonal variations, was treated with hypnotic techniques. He demonstrated a comparative over-all improvement of forty to forty-five per cent counterbalancing maximum seasonal scaling. There were specific points of interest in connection with his improvement and many questions to be answered in relation to the significance of the results for this case and others, and for possible future clinical and experimental investigations.

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Applied Psychiatry in Clinical Medicine

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One of psychiatry's contributions to clinical medicine is consideration of the sick patient as a person. More gratifying results occur if the physician not only treats the patient's disease but takes into consideration the human being who is afflicted. The practicing physician may find himself treating a patient symptomatically for a physical disease; he is duped until he determines the cause of the physical illness. Unless he has some basic understanding and interest in human behavior he runs the risk of being doubly deceived. For example, a doctor may be treating a patient symptomatically for indigestion which later proves to be caused by a carcinoma of the colon. The medical man is in the dark until the diagnosis has been made and he may then determine what can be done about the malignancy. The physician should be mindful of the patient's own personal reaction to the effects of the physical disease and to his attitude about the illness. The patient may be submissive and cooperative. However, his behavior might indicate a depressive reaction with suicidal intent. Unless the physician is acquainted with various personality reactions he may be completely lost in the situation. The individual's reaction to sickness may be determined by psychological factors that are more or less unconscious, whether the illness be a pneumonia, gastric ulcer or an anxiety state. Psychiatry regards human behavior as meaningful, that is it can be understood by common sense. Of necessity, the physician needs some understanding and knowledge of psychiatry.

Formerly the doctor's medical education emphasized the teaching of pathology, physiology and bacteriology. The medical student was taught and trained to consider patients primarily from an organic standpoint and the diagnosis of psychiatric disorders was made by exclusion. In general the physician dealt with disease entities rather than with personalities and individuals. With this approach, physical examination and laboratory studies were exhausted in an effort to find some organic physical explanation for the symptomatology. The patient was referred for psychiatric consultation only if he were severely neurotic or psychotic. In the event no physical illness was detected, treatment ended with complete dismissal or the patient was carried along indefinitely in a symptomatic manner with sedatives, tonics, diet, etc. Either the patient or the physician gave up and the patient shifted to another doctor or perhaps to quackery or Christian Science.

In the past decade the majority of medical men have widened their interest in psychiatry and they are aware that in approximately 40-60 per cent of their patients, psychological and emotional factors are playing a leading role. The lay public, although still resistant to psychiatry because of ignorance, prejudice and fear, is more familiar with the role emotions play in the production of illness as a result of press, radio and television. The high incidence of draft rejections and psychiatric casualties in World War II produced a profound effect on the public and increased its curiosity in the field of psychological medicine. The emphasis in recent years upon psychosomatic illness and the general acceptance of the role emotions play in disease has demanded more attention by the medical profession. The psychiatrist is coming out of "his shell" and is more closely associated with medical schools, post-graduate education, general hospitals and clinics. His language and terminology though still confusing and involved in some respects may be more understandable. However, he has not educated the lay public that a psychiatrist is a doctor of medicine with special training and qualifications in treatment of nervous and mental illnesses.

The practice of medicine has been profoundly influenced by the psychiatric approach, that is, man is a unified organism in his functioning and that he is attempting to adapt himself constantly to life situations in

disease and in health. It is an accomplished scientific truth that in illness or in health we can only look at man as a totally acting, unified functioning organism. When a man is physically sick, even with a cold in his head, he is sick all over; he may act differently than he would without a cold. In the event that he has disturbing mental conflicts not only his psyche but his body may be sick too. This is the basis upon which the important superstructure of psychosomatic medicine has been erected.[1]

Doctors have been trained to look for what they can detect with their senses; they often overlook factors that are just as real, that is, the feelings, desires, personal relationships or social failings which cannot be detected by the senses, but by human understanding. Too often the attitude of "either, or" is assumed in dealing with illness, that it is either physical or mental—instead of how much of the clinical picture is the result of organic disease and how much is on a psychological basis? The doctor who considers the individual as well as his physical complaints and symptoms is approaching the clinical problem from a psychiatric standpoint; he is practicing the art of medicine. The public refers to his attitude and approach as his "bedside manner." A careful history and physical examination is the beginning of this approach. The doctor-patient relationship determines the success of treatment and it is obvious that the treatment begins with the first meeting with the patient. The first words you have with the patient may determine just what sort of relationship is going to develop. The saying "Words have the power to heal and the power to destroy" is ever present in the doctor-patient relationship. The physician must show an interest in and a sympathy with the person and his problems of adaptation. This means that he has a feeling for the patient and gives the impression that he is interested in his welfare. The doctor's approach and attitude implies a belief in the patient's potential for better health.[2] He needs to be able to express encouragement and support even in the face of the patient's hostility. Physicians will encounter patients who are angry and disturbed in their illness and may express their feelings towards the physician and the latter may require as much "patience" as the person he is treating. It is equally important that the physician apply restraint to himself in not expressing contempt or ridicule of his patients either directly or indirectly. He should avoid using his patients to work out his own problems and conflicts or to dominate them to increase his own sense of security.

The physician should encourage a healthy doctor-patient relationship, in which the doctor is a thoroughly dependable friend. The human warmth of a physician and his authoritative role enables the patient to release his inhibitions and repressions. The physician should recognize that the patient may expect him to be an authoritative, omnipotent priest-father or the affectionate, giving mother.[3] The physician has a scientific objective approach to human problems, and although he may not know the remedies for many of them he is not overwhelmed and has some plan of action. He can help the patient work through the various problems and conflicts. The doctor has a plan of action through asking relevant questions and showing certain attitudes. The patient gradually takes on this point of view and learns to meet problems and situations by asking himself the same questions and using the trial and error approach that he has learned from the doctor.

The doctor tries to understand what forces are at work in the patient; the more he knows about the patient the better position he is in to understand and support him. We must be reminded of certain axiomatic facts, that people differ from one another in many ways—physique, the ability to stand strain, physical and emotional, the manner in which patients react to stress.[4] Acute and chronic illnesses may bring forth different sorts of reactions. Most patients who suffer from progressive and degenerative diseases—cancer, tuberculosis, cardiovascular disorders, show psychological responses. It is noteworthy to mention the modern therapeutic approach to poliomyelitis as compared to the past; at an early date the polio patient is encouraged to learn and accept the "polio philosophy" of meeting his disability and doing what he can about it.

Teaching psychotherapy is different from

any other type of medical teaching in that one teaches attitudes rather than facts, and that which is abstract, intuitive and personal becomes more significant than facts or history. A great deal of the confusion in present day teaching of psychiatry arises from the problem of attempting to teach psychopathology and psychodynamics concurrently with the teaching of processes of a therapeutic doctor-patient relationship. This has been well expressed by Woolley[5]; the teaching of psychotherapy is comparable to the teaching of painting or art of any kind. One needs to be mindful of the fact that the physician who is going to do the treating is a different person from ourselves and that he has a right to be himself in the treatment situation, so he cannot do just what we would do. Because we are dealing with the art of psychotherapy, it is most difficult to verbalize these abstractions. It can only be experienced by sitting in with a psychiatrist who is treating a patient, so that the physician becomes part of the therapeutic situation.

Common sense and the patience of listening for a few minutes enables the physician to adequately deal with the many problems that are simple in caring for the sick. Every physician is practicing psychiatry on his patients whether he knows he is or not. It is our hope that he is interested and capable of administering minor psychiatry as he would be able to do minor surgery. The psychoses and severe neuroses need to be treated by psychiatrists with their special qualifications, techniques and facilities. Depressive reactions in general require a psychiatrist because of the danger of suicide. The physician who is treating an involved psychosomatic illness might consult with a psychiatrist if the emotional disturbances are profound. Toxic delirious reactions are treated successfully by many general practitioners if they have the proper facilities, however, many general hospitals are poorly equipped to manage the common delirious reactions.

The answer to the question, "who should be referred to a psychiatrist" is a closer working relationship between the physician and the psychiatrist. Through consultation one learns the type of patient and illness that may require specialized help and those who do not. Therapeutic results will speak for themselves.

Psychiatrists find themselves in the public limelight today. In their newly found prominence they may be overzealous and promise too much. After all, they are first and foremost doctors of medicine who may be duped by a silent brain tumor.

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Studies on EEG and Sex Function Orgasm

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The term "orgasm" is referred to all the phenomena which occur in the act of ejaculation of semen in the male and expulsion of secretion from the Bartholin glands and of mucus from the uterine cavity in the female.

The mechanism and location of the centers participating in the production of all the physical and psychological reactions that take place in the course of orgasm are not fully known. The conditioning stimuli are not only centered in the genital area, from where undoubtedly afferent impulses arise to reach the spinal cord and ascend to other structures of the central nervous system. In addition to the known spread through various autonomic centers, the involvement of subcortical and cortical structures is suspected and the reactions observed during and following orgasm tend to corroborate this concept.

There are several sources of orgasm, which vary from true heterosexual intercourse to masturbation. This work is an attempt to contribute to the knowledge of the reactions which occur in the central nervous system as expressed through the recording of its electrical activity. Self-stimulation was used as means of observation.

Material and Methods

Six individuals, three males and three females, whose ages ranged from 23 to 38 years, were selected for these studies. A careful screening was made as to personal and family history of epilepsy, and previous EEG records taken in each of them showed normal patterns.

The subjects were placed in an isolated room, devoid of any extraneous interference, and several trials were made before obtaining a complete relaxation as required for the test. Twelve records were taken during masturbation. Each record lasted one hour approximately, the electrodes being placed in the frontal, precentral, temporal (anterior, middle and posterior) and occipital areas. A four channel instrument was used, with standard techniques as used in our laboratory.

Results

The subjects were studied as to their behavior and the correlated EEG changes which occurred during the whole performance.

Two subjects showed no evidence of body tension, and orgasm was reached with no apparent somatic modifications. Ejaculation occurred evenly and only a slight contraction of the jaws was observed.

Three subjects showed marked evidence of extreme tension, with rigidity of the legs, deep breathing, staring of the eyes, and spasmodic twitchings which were in crescendo up to the point of orgasm.

The fourth subject became pale, perspired, giving the picture of collapse at the point of orgasm followed by a complete relaxation and light sleep.

A common feature observed in the records obtained showed the following phases, which repeated in all the cases studied:

Phase I: Simultaneously with the onset of erotic stimulation, there is a gradual increase of low voltage rapid activity, particularly emanating from the temporal areas, which spread and generalize over all leads. This rapid activity is mixed with muscle potentials, which are superimposed in all cortical areas recorded (fig. I).

Phase II: At the acme of the orgasm, simultaneously with ejaculation in the male and the corresponding effects in the female, there is a slowing of the electrical activity with increase in voltage, until there are paroxysmal three per second waves which are mixed with rhythmic alternating muscular discharges (fig. II). Only the two patients who did not show evidence of body tension did not have those three per second waves, but a diminution of the rapid activity up to eight per second was observed instead.

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Phase III: The final stage after ejaculation was correlated with the reappearance of the low voltage rapid activity, upon which there were superimposed alternating, rhythmic, clonic muscular discharges (fig. III).

Phase IV: The record returns gradually to its initial pattern.

Comments

Orgasm is the final event which follows a series of reactions aroused by the gradual build up of erotic stimulation occurring during the sexual activity of an individual. The most important feature is the extreme tension expressed through the body reactions and the muscular rigidity occurring to the point of a convulsion, which is the starting point of a sudden release of this tension and a return to the normal conditions of the individual. It is obvious that the total nervous system participates in these events, with a striking mobilization of the autonomic nervous system as expressed through all the phenomena accompanying the sexual excitation. It is a well known fact that there is an increase in pulse rate, blood pressure, peripheral circulation and a flow of blood to several organs, associated with the muscular rigidity at the moment of maximum tension. The first phase, of mechanical tension, correlates with the participation of the sympathetic portion of the autonomic nervous system quickly mobilizing the body as for an emergency or an emotional state. Rage, fear, and hate seem to be expressed in much the same way. The muscular tension reaches its peak in the second phase and the simultaneous activation of both sympathetic and parasympathetic autonomic nervous system is shown by the third phase where, in addition to the alternating rhythmic muscular discharges, there are paroxysmal three per second high voltage waves recorded in all leads.

Analyzing the events which occur during orgasm, we feel tempted to establish a similarity with what happens during an epileptic convulsion. The phase of mechanical tension corresponds to the tonic phase of the seizure which gives way, during unconsciousness and clonic convulsions, to the relaxation and release of tension.

Reich believes that orgasm, like cellular division, is the counterpart of the accumulation of energy taking place in every process of growth. Freud considers that the epileptic convulsion is organically performed, appearing under conditions which might be regarded as exaggerated tensions of the libido. Its purpose is that of discharging by somatic channels, this amount of excitation that cannot be dealt with by physical means. Further studies are necessary to clarify this concept. However, the similarity of both events is apparent with the difference that in the epileptic attack, except for very rare cases where enuresis or even ejaculation itself occurs, there is no participation of the musculature of the genitals in the sense that this occurs during orgasm.

The occurrence of high voltage slow activity in the second phase coincident with orgasm is another tempting feature to correlate with the participation of the cortical and subcortical structures in the sexual response and not merely the genital areas. Although recent physiological research has verified the assumption set forth by previous authors that the cerebral cortex also influences autonomic functions, no cortical region has been found which can be regarded as a regulating center for autonomic functions alone. There is ample evidence to show that the hypothalamus, probably in collaboration with the rest of the thalamus and basal ganglia, is of fundamental importance for the so-called emotive processes. Bard has shown that the mesencephalon and upper portion of the medulla serve to provide many important instinctual capacities and that they normally operate only when activated by influences of cortical, striatal and hypothalamic origin. Animal experiments give evidence that the cortex is involved in the arousal and maintenance of the male's sexual excitement and reduction in susceptibility to sexual arousal subsequent to cortical injury appears to be proportional to the amount of neopallium removed. Experimental evidence shows that the male's susceptibility to sexual arousal is in part a function of forebrain activity. T. C. Erickson reported a case with erotomania, the result of a tumor which caused excitation of the tropical projection of the genital structures on the medial surface of the cerebral

hemispheres. The tumor was attached to the falx and impinged on the paracentral lobule on the medial surface of the hemisphere, just above the sulcus cinguli, an area homologous to that which contains the sensory representation of the genitalia in monkeys. Woolsey et al. have shown that the sensory representation of the genitalia in monkeys lies in the paracentral lobule at the upper lip of the callosomarginal sulcus. Therefore, either a tumor or an atrophic lesion might be expected to produce such a symptom if it caused irritation of the area of the sensoriomotor cortex representing the genitalia. Penfield described a patient with a lesion of the temporal lobe who exhibited sexual ideas as a component of his dreamy states. The experimental work performed by Jasper and Fortuyin on the origin of spike and wave activity, by stimulation of the intralaminar nuclei of the thalamus, also contributes to interpret and accept the participation of the cortical-subcortical structures in the sexual activity as expressed through the EEG changes described.

Summary

The study of reactions occurring in the central nervous system during orgasm was attempted through the recording of the electrical activity of the brain.

1) EEG studies were performed during orgasm obtained through self-stimulation. Those records show the following features, common in all the subjects investigated:

1st phase: There is a sudden increase of rapid activity, particularly emanating from the temporal areas. Simultaneously with the increase in fast activity, there is a sudden rise of muscular action potentials, superimposed in all the cortical areas recorded.

2nd phase: Simultaneously with the ejaculation in male and the corresponding effects of orgasm in the female subjects, there is a generalized slowing of the electrical activity, with three per second generalized activity and alternating muscular discharges which persist and are followed by a *3rd phase,* in which a depression of the electrical activity with alternating rhythmic, clonic muscular discharges, is recorded.

2) The EEG studies demonstrate the participation of the entire nervous system specially the autonomic and cortico-diencephalic portions and the physiological response of an orgasm.

3) The authors discuss the participation of the entire nervous system in the production of the orgasm. The cortico-diencephalic inter-relationship is stressed and the similarity of events in both orgasm and epileptic convulsion is emphasized.

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Effect of Isonicotinic Acid Hydrazide in Tuberculous and Nontuberculous Schizophrenics

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Early in 1952 many statements appeared in lay periodicals and newspapers concerning the beneficial effect of isonicotinic acid hydrazide (isoniazid) on (a) physical symptoms of pulmonary tuberculosis, (b) mood changes in tuberculous patients, and (c) the schizophrenic process in tuberculous and nontuberculous patients. A pilot experiment was performed at this hospital during the fall and winter of 1952-1953 to examine some of these claims. Most emphasis in this preliminary study was placed on assessing changes in self-ratings and indirect measures of mood. Secondary emphasis was placed on measurements of functional efficiency which might reflect changes in either mood and attitude or in the schizophrenic process, while least emphasis was put on other measures of personality structure.

Procedure

Seventeen male white schizophrenics, all patients at the Veterans Administration Hospital, Northampton, Massachusetts, were used in this pilot study. Nine patients (four with active pulmonary tuberculosis in addition to chronic schizophrenia, and five nontuberculous chronic schizophrenics) received 50 mg. isonicotinic acid hydrazide (isoniazid) three times daily for a period of five months. The control group (four tuberculous chronic schizophrenics and four nontuberculous chronic schizophrenics) received no medication during the course of the study.

The experimental group ranged from 26.5 to 61.2 years in age, with a duration of mental illness from 1.0 to 18.5 years. Control patients ranged in age from 27.5 to 62.1 years with a duration of mental illness from 1.5 to 26.7 years. The duration of tuberculosis in the experimental group ranged from 5.1 to 8.2 years, in the control group from 5.7 to 12.1 years.

From the Veterans Administration Hospital, Northampton, Mass.

All experimental patients were group tested shortly before the first administration of isoniazid, five days after treatment, and five months later (shortly after the medication was stopped). Control patients were group tested at comparable intervals. The test battery consisted of the following measures: (a) clinical evaluations—Ward Behavior Rating Scale (Northport Record for Description of Psychiatric Patient), Psychiatric Rating (Schedule A of VA Prefrontal Lobotomy Research Project); (b) direct self-ratings of mood—Hildreth Feeling and Attitude Scale, Feeling Inventory, Robinson-Freeman Sensibility Questionnaire; (c) indirect assessments of mood—Thematic Apperception Test (Cards 6BM and 7BM), Tendler Completion Test, Word Association, Multiple-Choice Rorschach, Draw-a-Man; and (d) measures of efficiency—Vocabulary, Digit Symbol, and Digit Span subtests of the Wechsler-Bellevue Scale of Adult Intelligence (Form I), Series Completion subtest of the Army Wechsler Scale (Form B), Capp's Categorization Test, Benton Visual Retention Test, Babcock Memory Paragraph, Hunt-Minnesota Auditory Memory (Hard Pairs), Northampton adaptation of O'Connor Finger Dexterity, and Successive Subtraction of 7 from 100. (Description of most of the tests and their sources may be found in reference 8.)

Results

There were no significant changes in the experimental group with respect to mood or schizophrenic symptomatology as reflected in ward behavior or psychiatric evaluation when shifts in ratings were tested statistically by Chi-square.[3] Similarly, there were no significant changes in the measures of functional efficiency when tested by Kogan's method of analysis of variance for repeated measurements.[5]

Preliminary qualitative analysis of direct self-ratings and indirect assessments of

mood suggested that, at the five day testing, experimental patients showed a relative increase in negative mood, poorer concentration, more social estrangement, and less expression of well-being. At five months, the qualitative analysis suggested more expression of feelings of well-being, somewhat increased emotional responsiveness, less somatic preoccupation, less depressiveness, fewer hallucinatory experiences, and less sleep disturbance. Since these apparent changes were not paralleled by changes in ward behavior or objective tests, quantitative comparisons involving the same data were carried out. This treatment of the data indicated that no more changes occurred in any measure or in any time period than would be expected by chance. These findings, though subject to limitations of the sample, strongly suggest that administration of isoniazid does not appreciably affect mood, behavior, or efficiency in schizophrenic patients. The results of the present study are consistent with those of Bennett, Cohen, and Starer,[1] Ferrara and Peterson,[2] Hunt and Wassersug[4] and Wilson[10] who have suggested that isoniazid is not useful in the treatment of the schizophrenic process. However, the present results do not negate the usefulness of INAH with non-schizophrenic patients as suggested by Levy,[6] Salzer and Lurie,[7] and Thompson and Proctor.[9]

Although isoniazid appeared to yield negative results for the improvement of psychiatric symptomatology in chronic schizophrenia, examination of the ward physician's progress notes for the four experimental patients with pulmonary tuberculosis suggests that isoniazid may be useful for ameliorating physical symptoms and the psychiatric symptomatology which is related to the disease process. Of the four tuberculous patients, one showed definite improvement (accompanied by parallel changes in in psychological test findings), two showed slight improvement, and one showed no change in physical symptomatology. These results are consistent with the figures reported by Ferrara and Peterson.[2]

Summary

A pilot study of the effect of administration of isonicotinic acid hydrazide on mood, ward behavior, psychiatric symptomatology, and efficiency in chronic schizophrenic patients yielded negative results. Since other investigators have found similar results, it appears that this drug is of dubious value in the treatment of the chronic schizophrenic process. The results of this experiment, however, suggest that isoniazid may be useful in ameliorating physical symptoms of tuberculosis and, at the same time, may possibly reduce some of the psychiatric symptomatology which is exacerbated by the disease process.

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